



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,774	10/13/2000	Akio Katsube	018976-181	8104

21839 7590 08/29/2003

BURNS DOANE SWECKER & MATHIS L L P  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER

COMPTON, ERIC B

ART UNIT	PAPER NUMBER
3726	

DATE MAILED: 08/29/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/689,774	KATSUBE ET AL.
	Examiner	Art Unit
	Eric B. Compton	3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 16 July 2003.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 5-17 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 62-244142 to Tatsufumi et al (MATSUSHITA).

Regarding claim 5, Tatsufumi et al disclose a method for manufacturing electronic components, comprising: holding a substrate (6) on the surface of an elastic material an anisotropic conductive adhesive layer (4) in which powdered bodies having conductivity and ***rubber elasticity*** are dispersed to a bonding agent consisting of a synthetic resin by the strength of the surface; and mounting and electrically connecting an element (9) on the substrate while surface is held on the surface of the elastic material.

3. Claims 7, 10, 11, 12, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 07-022795 to Kazuhiko et al (SHIN ESTU CHEM CO).

Regarding claim 7, Kazuhiko et al disclose a method for manufacturing electronic components, comprising: holding a substrate (3) on a surface of an elastic material (1), in which at least the surface of the elastic material is adhesive, by the strength of the surface; and mounting and electrically connecting an element (see section [0020] of the

machine translation]) on the substrate while surface is held on the surface of the elastic material.

Regarding claim 10, Applicant discloses a silicone rubber composition and that these compositions are stable at 250 °C. Therefore, it is inherent that this composition is stable at this temperature also.

Regarding claim 11, the step of holding is carried out using a jig having a laminate structure comprising: a hard material (2) and the elastic material (1).

Regarding claims 12 and 15, the elastic material is an adhesive silicone rubber layer.

Regarding claim 16, the elastic material can be considered a laminating layer, since it bonds the hard material plate (2) to the substrate (3).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 9, 10 and 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al in view of US patent 4,098,945 to Oehmke.

Kazuhiko et al disclose the invention cited above. However, they do not disclose that the elastic material is conductive or having a harness of at least A30.

Oehmke discloses a conductive adhesive elastic material comprising an elastic binder for "peelable adhesive fastening of metallic materials without interruption of the electrical conductive pathways between them" (col. 7, lines 62-64). It is disclosed that the conductive material may preferably comprise silicone rubber (see col. 6, lines 38-43). Furthermore, it is noted that the "binder should be capable of providing a soft composition having a Shore A hardness of less than about 40" (col 6., lines 34-36). It is also pointed out that a Shore A harness of greater than 40 is too hard for most applications (cols. 1-2, lines 66-1).

Regarding claims 6 and 17, it would have been obvious to one having ordinary skill in the art at the time of invention, to have provided the elastic of Kazuhiko with conductive particles, in light of the teachings of Oehmke, in order to provide a conductive interface between two already conductive bodies (col. 1, lines 28-31), such as between a closed circuit to a ground plate (col. 7, line 66). Note: the bonding process can be considered a lamination process.

Regarding claim 9, it would have been obvious to one having ordinary skill in the art at the time of invention, to have provided the elastic of Kazuhiko with a rubber having a hardness of at least A30, in light of the teachings of Oehmke, in order to provide an adhesive having a requisite conformability, moldability, and flexibility (col 2, lines 21+).

Regarding claim 10, both Applicant and Oehmke disclose a silicone rubber composition. Applicant notes these composition are stable at 250 °C. Therefore, it is inherent that this composition is stable at this temperature also.

6. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al in view of Applicant's Admitted Prior Art (AAPA).

Kazuhiko et al disclose the invention cited above. However, they do not specifically disclose how the electronic components are mounted on the substrate.

AAPA notes as on prior art on page 1, lines 22+, of the specification that wire bonding is a known bonding technique using an automated process.

Regarding claim 13, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al by a wire bonding process, in light of the teachings of AAPA, in order to manufacture electronic components using conventional bonding apparatus known in the art.

7. Claims 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al in view of JP 11-045912 to MATSUSHITA.

Kazuhiko et al disclose the invention cited above. However, they do not specifically disclose how the electronic components are mounted on the substrate.

Matsushita discloses a method an apparatus for bonding electronic components to substrate. The electronic components are bump bonded to the substrate using ultrasonic waves. The process allows the component to be conductively bonding very firmly (Derwent English Abstract).

Regarding claims 8 and 14, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al by a bump bonding process using ultrasonic waves, in light of the teachings of Matsushita, in order to

manufacture electronic components using conventional bonding apparatus known in the art to firmly bond the component to the substrate.

### ***Response to Arguments***

Applicant's arguments filed July 16, 2003, have been fully considered but they are not persuasive.

The English translation of JP 62-244142 (Tatsufumi et al) has been reviewed. Applicant's arguments with respect to its teachings, in light of the translation are not found persuasive. Applicant argues that Tatsufumi et al teach that the adhesive layer "is merely placed between the gold bump of the chip and the electrode of the support to connect the bump to the support." Response, page 8. However, this is not entirely correct. As shown in Figures 1-3, the adhesive layer (4) is between the chip (9) and the support (6). Furthermore, Applicant argues that Tatsufumi et al do not teach or suggest holding an electronic part or component by the adhesive strength of the surface of the elastic material. Response, page 8. However, Tatsufumi et al disclose, "since the binder resin become firmly fixed once cooled, ***the binder can tightly fix the IC chip onto the support.***" English Abstract, page 4, last sentence (emphasis added). Therefore, Tatsufumi et al do teach an adhesive bond between the chip and the support, just like Applicant. As noted in the same paragraph the binder is part of an anisotropic conductive adhesive, which may be an elastic silicone rubber having dispersed conductive filler. The elastic material of Tatsufumi et al is identical to Applicant's, having

both conductive and adhesive characteristics. Thus, Tatsufumi et al anticipate the claims cited above.

With respect to JP 07-022795 (Kazuhiuko et al), Applicant argues that this reference does not show, teach, or suggest "mounting an electrically connecting an element on a substrate while the substrate is held on a surface of an elastic material." Response, page 10. It is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 7, recites

A method of manufacturing electronic parts, comprising:

holding a substrate on a surface of an elastic material, in which at least the surface of said elastic material is adhesive, by the adhesive strength of the surface; and

mounting and electrically connecting an element on said substrate while the substrate is held on the surface of the elastic material.

As suggested by [0020] of the reference, electronic parts (no ref) are electrically connected to the substrate (3), via copper circuit patterns, while it is held on the surface of an elastic material (1) by the adhesive strength of the elastic material. Despite Applicant's arguments to the contrary, the language of claim 7 does not explicitly require the substrate to be electrically connected to the elastic material, but only that an element is electrically connected to the substrate while the substrate is held on the surface of the elastic material. Thus, Kazuhiuko et al anticipate the claims cited above.

With respect to U.S. Pat 4,098,945 (Oehmke), Applicant argues that this reference does not teach or suggest "the [conductive elastic] material can hold a substrate on its surface by the adhesive strength of its surface." Response, page 11.

However, Oehmke discloses “the binder system is itself pressure-sensitive so that the entire conductive composition will ***immediately adhere to conductive surfaces*** upon impact.” Col. 6, lines 44-46 (emphasis added). Likewise, the reference refers to the layers as an adhesive. *Id.* at lines 44-64. It is inherent that an adhesive has a certain degree of adhesive strength, for which the reference refers to as 180 ° (adhesion) peel strength and provided empirical data. *Id.* at Table II. Lastly, Oehmke discloses that “[these] compositions are useful for a wide variety of application which include peelable adhesive fastening of metallic material without interruptions of the electrical conductive pathway between them …” for example for use as a ground or to fasten metal objects together. *Id.* at Cols. 7-8, lines 60-2. Therefore, Oehmke conductive adhesive would be sufficient to adhesively attach electronic components to a substrate. The Examiner previously made a *prima facie* case above for combining these teachings with those of Kazuhiko et al. In addition, Applicant argues that there is no suggestion of “mounting and electrically connecting an element on the substrate while the substrate is held on the surface of the elastic material.” Response, page 12. This, limitation was previously discuss with respect to Kazuhiko et al, *supra*.

Applicant’s arguments with regards to the other rejections are believed to be moot in light of the clarification above.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (703) 305-0240. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory M. Vidovich can be reached on (703) 308-1513. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

*EC*  
ebc  
August 26, 2003

*Gregory Vidovich*  
GREGORY VIDOVICH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700